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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,129	07/08/2003	Jeffery A. Tyler	Lisk 07/03	8148
20808	7590	05/12/2004	EXAMINER	
BROWN & MICHAELS, PC 400 M & T BANK BUILDING 118 NORTH TIOGA ST ITHACA, NY 14850			TRIEU, THAI BA	
			ART UNIT	PAPER NUMBER
			3748	

DATE MAILED: 05/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,129

Applicant(s)

TYLER, JEFFERY A.

Examiner

Thai-Ba Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6,7,9,12-15,17,19-22 and 24 is/are rejected.
- 7) ☒ Claim(s) 2,5,8,10,11,16,18 and 23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 09/05/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

- On Page 5, line 7, "**a rack 46**" should be replaced by -- **a rack 49** -- (for correcting typo error).

Appropriate correction is required.

Claim Objections

Claims 2, and 9 objected to because of the following informalities:

- In claim 2, line 1-2, "**the solenoid**" should be replaced by -- **the proportional solenoid** -- (for consistency of the whole specification and claims).
- In claim 9, lines 1-2, "**the controller**" should be replaced by -- **a controller** -- (for avoiding lack antecedent basis in the claims).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-4, 6, 17, 19-22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa (Pub. Number US 2002/0069859 A1), in view of Walters (Patent Number 3,872,772).

Hasegawa discloses a system controlling flow to an engine intake via a control valve (31) arranged to vary flow rates in passageways leading through a cooler (27) and a cooler bypass (29) (See Figures 1 and 6), the system comprising:

an actuator (33) arranged to adjust the control valve (31) to vary the flow rates (See Figures 1 and 6);

an electronic control (35) having an input from a sensor (air flow meter sensor 37, acceleration position sensor 39, rotational speed sensor 41, temperature sensor 49, atmospheric temperature and pressure sensors 53 and 55) of an engine condition and having an output of current to the solenoid (being implicitly in the actuator 31) (See Figures 1, 6 and 13, Paragraphs [0040], [0041], [0052], and [0064]);

wherein the electronic control is a microprocessor (35), and including a plurality of sensors (air flow meter sensor 37, acceleration position sensor 39, rotational speed sensor 41, temperature sensor 49, atmospheric temperature and pressure sensors 53 and 55) of different engine conditions resulting in adjustment of the control valve as a function of the sensed engine conditions (See Figures 1, 6 and 13, Paragraphs [0040], [0041], [0052], and [0064]).

However, Hasegawa fails to disclose the actuator being hydraulic; the solenoid being proportional for operating a spool valve in a hydraulic circuit; a mechanical coupling arranged to feed position of the control valve back to the spool valve in

opposition to the proportional solenoid; the mechanical coupling being a spring compressed between the hydraulic actuator and the spool valve.

Walters teaches that it is conventional in the electro hydraulic actuator art, to utilize the hydraulic actuator (Not Numbered); the proportional solenoid (26); a mechanical coupling (Spring 17) arranged to feed position of the control valve back to the spool valve (10) in opposition to the proportional solenoid; and the proportional solenoid controlling the control valve through out a range of positions via mechanical coupling feedback (17); and the mechanical coupling being a spring compressed between the hydraulic actuator and the spool valve (See Figure, Column 1, lines 7-65, and Column 2, lines 1-30).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the actuator being hydraulic; the solenoid being proportional for operating a spool valve in a hydraulic circuit; a mechanical coupling arranged to feed position of the control valve back to the spool valve in opposition to the proportional solenoid; and the mechanical coupling is a spring compressed between the hydraulic actuator and the spool valve, as taught by Walters, to improve the adjustment accuracy of the air intake control valve, in the Hasegawa device.

Claims 7, 9, and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scherenberg (Pub. Number 3627686 A1), in view of Walters (Patent Number 3,872,772).

Regarding claims 7, 9, and 12 Scherenberg discloses a system regulating temperature of charged inlet air to an engine, the system including a supercharger or turbocharger (2), an intercooler (6), an intercooler bypass (7), and a sensor of engine temperature (16), and the system comprising:

at least one air valve (9) arranged to vary a rate of cooled air flow reaching the engine via the intercooler (6) and to vary a rate of un-cooled air flow reaching the engine via the bypass (7) (See Figure 1),

an actuator arranged to position the air valve (9) to affect the temperature of the air flow reaching the engine intake in response to engine temperature detected by the sensor (16); and

a controller (11) being in communication with another sensor (17, 18) of an engine condition other than temperature.

However, Scherenberg fails to disclose an actuator being hydraulic; a circuit powering the hydraulic actuator; and a mechanical feedback transmitting air valve position to the spool valve via a spring in opposition to force applied to the spool valve by the solenoid; and the spring compressed between the hydraulic actuator and the spool valve.

Walters teaches that it is conventional in the electro hydraulic actuator art, to utilize the hydraulic actuator (Not Numbered); the proportional solenoid (26); a circuit powering the hydraulic actuator (via 6) being controlled by a spool valve moved by a proportional solenoid receiving electrical input from a controller in communication with the sensor; a mechanical feedback transmitting air valve position to the spool valve via

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a spring (17) in opposition to force applied to the spool valve by the solenoid; and the spring (17) compressed between the hydraulic actuator and the spool valve (10) (See Figure, Column 1, lines 7-65, and Column 2, lines 1-30).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized an actuator being hydraulic; a circuit powering the hydraulic actuator; a mechanical feedback transmitting air valve position to the spool valve via a spring in opposition to force applied to the spool valve by the solenoid; and the spring compressed between the hydraulic actuator and the spool valve as taught by Walters, to the adjustment accuracy of the air intake control valve, in the Scherenberg device.

Regarding claims 13-15, the method as claimed would be inherent during the normal use and operation of the modified Scherenberg device.

Allowable Subject Matter

Claims **2, 5, 8, 10-11, 16, 18 and 23** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The IDS (PTO-1449) filed on September 05, 2003 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- McCandless et al. (US Patent Number 5,079,921) disclose an exhaust backpressure control having a butterfly valve being controlled by a hydraulic actuator piston (34).

- Esmailzadeh (US Patent Number 6,170,514 B1) discloses city water flushing and sludge prevention control apparatus having a hydraulic control mechanism (14).

- Barlow (US Patent Number 3,954,045) discloses a rotary actuator valve.

- Ramisch (US Patent Number 4,556,192) discloses a butterfly valve with servo motor opening taking place by means of hydraulic force and closing by means of spring force.

- Renfor (US Patent Number 4,493,336) discloses a hydraulic choking device.

- Schulze (US Patent Number 3,797,364) discloses a follow up control apparatus.

- Hutchison et al. (US Patent Number 5,350,152) disclose a displacement controlled hydraulic proportional valve.

- Martin (US Patent Number 4,201,116) discloses an electronic hydraulic proportional control servo valve.

- Tyler (US Patent Number 6,601,821 B2) discloses a proportional control valve assembly.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
May 10, 2004



Thai-Ba Trieu
Patent Examiner
Art Unit 3748